

PYN'KO, V.G.

*JPR 5 59068
6-73*

XVI-10. LIFTING OF Ge ON (100) SURFACES OF NaCl, CaF_2 AND BaF_2 CRYSTALS
Article by E. Zh.-B. Lyudsk, V. G. Pyn'ko, V. N. Geyer, A. A. Lashchik,
K. A. Krasovskiy, I. I. Simoniuk, D. E. Fokhts, A. A. Gerasimov,
V. A. Krasovskiy, I. I. Simoniuk, Russian, 12-17 June 1972, p. 2291

The characteristic features of germanium epitaxy are compared for vacuum condensation of it on (100) NaCl, CaF_2 and BaF_2 surfaces. The CaF_2 and BaF_2 substrates in the form of monocrystalline layers with (100) surfaces were grown epitaxially on NaCl crystals by vacuum condensation. The surfaces of the NaCl substrates were manufactured by three procedures: the cleavage of the crystal in the air, cleavage in a vacuum during deposition of the germanium, and the surface of the NaCl autocatalytic layer was used.

In spite of the almost complete coincidence of the lattice periods of Ge and NaCl, an oriented germanium film cannot be uniquely obtained on the (001) surface of NaCl crystal.

Perfect monocrystalline germanium films with orientation parallel to the substrate were obtained on the (100) CaF_2 and BaF_2 surfaces.

An effort is made to explain the results obtained on the basis of the concepts of the atomic structure of a real crystal surface.

USSR

UDC 669.1:539.216.2:538.249

KIRENSKIY, L.V., PYH'KO, V.G., and TEMCHENKO, N.SH., Institute of Physics,
Siberian Branch of the Academy of Sciences USSR and Krasnoyarsk Pedagogical
Institute

"Uniaxial Magnetic Anisotropy in Single-Crystal Fe-Co Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 2, Feb 71, pp 324-329

Abstract: A study was made to explain the nature of the uniaxial anisotropy observed in single-crystal Fe-Co Films. The films were prepared by vacuum condensation of Fe-Co vapors on the surfaces of LiF and MgO single crystals for which a portion was condensed in a magnetic field of approximately 150 oersted using a horseshoe magnet. Films having a b.c.c lattice and containing up to 70% Co were investigated. Measurements were made of the constant of uniaxial anisotropy K_u for films condensed in a magnetic field and without it. The greatest values of K_u (up to 10^5 erg/cm³) were observed in films with 70% Fe and 30% Co. Values of K_u were measured after cooling the films to the temperature of liquid nitrogen in the magnetic field. The results obtained testify to the fact that the reason for a large uniaxial anisotropy of the films is directed ordering of the alloy. The authors thank N.M. REPIN for his assistance in conducting the experiments. 3 tables, 5 bibliographical references.

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USSR

UDC 539.216.2:621.318.1

PYN'KO, G. P., and PYN'KO, V. G., Institute of Physics, Siberian
Department of the Academy of Sciences USSR

"Magnetic Anisotropy of Monocrystalline Nickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6,
Jun 71, pp 1318-1320

Abstract: The growth of monocrystalline Ni films on the surface
(001) of ion crystal bases of MgO takes place according to the
schema $(001)[100]_{\text{nickel}} \parallel (001)[100]_{\text{base}}$, the magnetic aniso-
tropy in the plane of the film being biaxial. The constant of the
biaxial anisotropy K_1 , part of which in other publications is
said to be anomalously too big, is investigated. Contrary to com-
pact single crystals of Ni, in which the magnetocrystalline aniso-
tropy constant K_1 increases with augmentation of the magnetic
field, the experimental investigation shows that in the case of
Ni films, a further field augmentation after saturation effects a

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PYN'KO, G. P., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1318-1320

decrease of the absolute value of K_i . Investigations of the magnetostriction of films of alloys 50 % Co - 50 % Ni and 66 % Co - 34 % Ni revealed that the values of the magnetostriction constants $|\lambda_{100}|$ and $|\lambda_{110}|$ are not lower than for Ni and that they have the same symbol. This leads to the conclusion that the development of uniaxially stressed micro-fields in films on MgO-bases is combined with magnetostrictional deformations rising from the film formation. One illustr., one table, eight biblio. refs.

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USSR

UDC 620.181.428.5

P
MUSHILOV, E. S., PYN'KO, V. G., SUKHOVSKIY, A. A.

"Automatic Rotating Magnetometer for Measurement of Small Moments"

Moscow, Pribery i Tekhnika Eksperimenta, pp 225-226

Abstract: A simple automatic magnetometer with electromagnetic compensation of the measured torque is described. The sensitivity of the device is no worse than 10^{-4} dyn/cm. The device is suitable for measurement of the magnetic parameters of thin magnetic films.

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1/2 038 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF MAGNETOSTRICTION DEFORMATIONS ON THE EPITAXIAL GROWTH OF
FERROMAGNETIC FILMS -U-
AUTHOR--PYNKO, V.G., TEMCHENKO, N.SH., ANNATAGANOV, N. *P*
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 960
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--EPITAXIAL GROWTH, FERROMAGNETIC FILM, NICKEL ALLOY, PALLADIUM
ALLOY, SINGLE CRYSTAL FILM, MAGNETOSTRICTION, IRON ALLOY, COBALT ALLOY,
MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0654 STEP NO--UR/0181/70/012/003/0960/0960
CIRC ACCESSION NO--AP0105633

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--11SEP76

CIRC ACCESSION NO--AP0105633

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF FILMS WAS PREPD. OF BINARY ALLOYS OF THE SYSTEM FE-NI-CO. A MAGNETIC FIELD HAS ALMOST NO EFFECT ON THE GROWTH OF FILMS WHICH HAVE SMALL MAGNETOSTRICTION, E.G. BONI-20FE. ON NaCl SUBSTRATES WITHOUT APPLICATION OF A MAGNETIC FIELD, NO GOOD SINGLE CRYSTAL FILM OF NI-PD CAN BE GROWN CONTG. 30-60PERCENT PD, I.E. ALLOYS HAVING ESP. HIGH MAGNETOSTRICTION. ON ZIF (SIC) AND NGO SUBSTRATES THESE ALLOYS GROW AS SINGLE CRYSTALS. THE MECHANISM OF GROWTH OF THESE FILMS IS DISCUSSED.

UNCLASSIFIED

1/2 012
UNCLASSIFIED
PROCESSING DATE--16OCT70
TITLE--VISCOSITY OF MELTS OF DEFLUORINATED PHOSPHATES -U-
AUTHOR--(03)-OSNACH, A.M., PYORO, L.S., BRYANTSEV, B.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. UKR. 1970, (1), 3-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOSPHATE, FLUORIDE, FLUID VISCOSITY, FERTILIZER PRODUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0855
STEP NO--UR/0436/70/000/001/0003/0005
CIRC ACCESSION NO--AP0118031
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118031

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITY OF APATITE MELTS WAS MEASURED AT AVRIOUS TEMPS. IN ORDER TO CALC. THE OPTIMAL PARAMETERS FOR FERTILIZER PRODUCTION. DEFLUORINATED APATITE WAS USED BECAUSE SLIGHT CHANGES IN THE F CONTNET CAUSE CONSIDERABLE VARIATIONS IN THE MELT VISCOSITY. F DEPRESSES THE MELTING TEMP. AND MAKES THE MELTS LESS VISCOUS. DEFLUORINATED APATITE M. 1600DEGREES. VISCOSITY CHANGES OF 5-200 P WERE MEASURABLE DURING THE COOLING PROCESS. ADDN. OF 10-12PERCENT SIO SUB2 LOWERS THE MELTING TEMP. TO 1380DEGREES. AT 6 AND 16PERCENT SIO SUB2, THE MELTING TEMP. IS 1500DEGREES. ADDING 10PERCENT H SUB3 PO SUB4 (70PERCENT) LOWERS THE MILTING TEMP. TO 1400DEGREES. DESPIRTE THE CHEAPNESS OF SAND, THE MOST ECONOMICAL ADMIXT. TO THE CONVERTER IS 2-3PERCENT P SUB2 O SUB5 IN THE FORM OF THE ACID TO APATITE ORE CONCENTRATES CONTG. F.

FACILITY: INST. GAZA, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 548.52

DORFMAN, V. F., PYPKIN, B. N., and COHERETYANSKIY, A. L., Institute of Electronic Control Machines

"Effect of Growth Rate and Crystallization Conditions on Defect Formation in Epitaxial GaAs and GaP layers"

Moscow, Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

Abstract: Previous articles by the authors described the procedure and results of kinetic studies of the epitaxial growth of GaAs and GaP layers in the iodide sandwich process. It was shown that the principal kinetic regularities are exactly alike for GaP and GaAs. The present article attempts to study the effect of growth rate and crystallization conditions on defect formation in epitaxial layers. The main study was devoted to GaAs, but control measurements on GaP specimens obtained under similar conditions permit the conclusions to be applied to GaP, as well. Growth rates are from 10 to 6000 microns/hr, pressure in gas phase from 0.01 to 10 atm (C_1 up to 30 g/l), substrate temperature from 700 to 1000° C, excess of Ga and As components up to 3 g/l, process time 30 min., thickness of investigated

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DORFMAN, V. F., et al., Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

specimens from 100 to 3000 microns. Principal types of defects considered: two-dimensional dislocation network coinciding with the interface, "upright" dislocations intergrowing chiefly from the substrate, wide transition region with increased dislocation density, and polar twins.

The dislocation density in epitaxial GaAs layers does not exceed $1 - 3 \cdot 10^4 \text{ cm}^{-2}$ at a growth rate of up to 1000-1200 microns/hr (at $V_g = 6000$ microns/hr $N_d \approx 1 - 5 \cdot 10^5$). It is assumed that the formation of the transition region is due to deviation from stoichiometry in the growing crystal as a result of α - or β -vacancy capture, which in turn leads to mechanical stresses. In accordance with this, the size of the transition region can be regulated by varying the gas phase composition (the effect can be eliminated by introducing excess Ga in the gas phase or intensified by introducing excess As).

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DORFMAN, V. F., et al., Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

Some electrophysical characteristics of epitaxial GaAs and GaP layers are given. Electroluminescent diodes in the red, yellow, and green wavelength ranges were produced from epitaxial GaP layers. The introduction of excess Ca in the gas phase during the growth of the epitaxial layers substantially increases the radiation intensity of the light-emitting diode.

The authors thank K. M. ROZIN and O. L. KREYNIN for useful discussion.

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1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PHASE EQUILIBRIUMS IN A DIMETHYL TEREPHTHALATE METHANOL WATER SYSTEM
-U-
AUTHOR--(02)-PYRANIKOVA, R.O., YEFREMOVA, G.D.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 676-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE EQUILIBRIUM, PHTHALATE, METHANOL, WATER, ISOTHERM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0714 STEP NO--UR/0076/70/044/003/0676/0679
CIRC ACCESSION NO--AP0119621
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119621

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. OF DI-ME TEREPHTHALATE (I) IN H SUB2 O-MEON WAS DETD. AT 50-140DEGREES. AT MEON CONCNS LARGER THAN 48PERCENT, THE LIQ. PHASE WAS HOMOGENEOUS, WHEREAS IN LESS CONCD. SOLNS. IT SPED. INTO 2 PHASES AT CERTAIN COMPN. RANGES. THE LIQ.-LIQ. EQUIL. WAS INVESTIGATED AT 115-80DEGREES. AT CONST. MEON-H SUB2 O RATIO, THE MUTUAL SOLY. OF THE LIQUID PHASES INCREASED WITH TEMP. ISOTHERMS OF THE SOLID-LIQ. AND LIQ.-LIQ. EQUIL. ON THE TRIANGULAR DIAGRAM WERE PLOTTED. UP TO 115DEGREES, THE CRYSTN. ISOTHERMS WERE CONTINUOUS OVER THE WHOLE COMPN. RANGE BUT, AT HIGHER TEMPS., A REGION OF THE LIQ.-LIQ. EQUIL. APPEARED, INCREASED WITH TEMP., AND THEN DECREASED. THE ISOTHERMS OF THE LIQ.-LIQ. EQUIL. ENDED AT CRIT. POINTS, AT WHICH THE CRITICAL PHENOMENA WERE OBSD. IN THE PRESENCE OF NON-CRIT. GAS PHASE. CRIT. PARAMETERS OF THE LIQ.-LIQ. EQUIL. IN THE SYSTEM WERE (TEMP. AND MOLAR FRACTIONS I AND MEON, RESP.) 122DEGREES, 0.105, 0.281; 130.7DEGREES, 0.085, 0.247; 174.5DEGREES, 0.089, 0.150. FACILITY: NAUCH.-ISSLED. INST. AZOT. PROM. PROD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CHEMISTRY AND MECHANISM OF THE ACTION OF ANESTHETICS -U-
AUTHOR--(02)-PYRANISHNIKOVA, N.T., LIKHOSHERSTOV, A.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 207-16
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANESTHETIC, CHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3009/0125 STEP NO--UR/0063/70/015/002/0207/0216
CIRC ACCESSION NO--AP0138990
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0138990

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW COVERING THE PRINCIPAL CLASSES OF ANESTHETIC SUBSTANCES WITH EMPHASIS ON AMINOALKYL ESTERS OF ORG. ACIDS AND THEIR AMIDE ANALOGS. THE EFFECTS OF STRUCTURAL CHANGES ON ACTIVITY ARE SUMMARIZED AND THIS IS RELATED TO VARIATION OF PHYSICO CHEM. PROPERTIES IN GENERAL.

UNCLASSIFIED

Acc. Nr: *AP0052453*

Ref. Code: *UR0475*

PRIMARY SOURCE: *Vrachebnoye Delo*, 1970, Nr *2*, pp *54-57*

BLOOD SERUM AND URINARY AMINE NITROGEN AND THE FUNCTIONAL STATE
OF THE LIVER IN NEPHROPATHIES

L. D. Nikula and L. A. Pyrig, (Kiev)

Findings of the amino acid metabolism were compared with different hepatic functions in 104 patients with nephropathies.

Results indicate that patients with the nephrotic syndrome showed hyperaminoaciduria, an increase of the clearance of amine nitrogen, a tendency to hyperaminoacidemia. Patients with chronic renal insufficiency showed hyperaminoacidemia, hypoaminoaciduria, a reduction of the clearance of amine acid.

Hepatic disorders exerted a negative effect on amino acid metabolism in patients with nephropathy, but there was no parallelism between disorders of separate functions of the liver and changes of aminoacid indices.

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REEL/FRAME
19821087

172 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--BEHAVIOR OF IRON ORE MATERIALS DURING REDUCTION -U-
AUTHOR--(05)--POKHVISNEV, A.N., SPEKTOR, A.N., YUSFEN, YU.S., BAZILEVICH,
T.N., PYRIKOV, A.N.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(2), 97-105
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--IRON ORE, CHEMICAL REACTION MACHANISM, THERMAL EFFECT,
CHEMICAL REDUCTION, SINTERING FURNACE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1951 STEP NO--UR/0133/70/030/002/0097/0105
CIRC ACCESSION NO--AP0115759
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLUXED AND NONFLUXED PLAIN AND DOUBLE LAYER PELLETS AND SAMPLES OF SINTER, BOTH EXPTL. AND COM., FROM MANY SOVIET, JAPANESE, AND AUSTRIAN SOURCES, WERE HEATED ISOTHERMALLY AT 600-1200DEGREES IN H, CO, AND CO-CO SUB2-N MIXT., OR WERE HEATED BY GRADUALLY INCREASING THE TEMP. FROM 300 TO 1200DEGREES IN 4 HR AND PERIODICALLY CHANGING THE GAS COMPN. TREATED SAMPLES WERE TESTED FOR VOL. AND STRENGTH CHANGES, MICRO AND MACROSTRUCTURE VARIATIONS, AND FOR POROSITY. THE RESULTS ARE DESCRIBED AND PRESENTED IN DIAGRAMS. REDN. WITH H AND CO LOWERS THE STRENGTH OF ALL MATERIALS TESTED. THE CRUSHING STRENGTH AND ABRASION RESISTANCE OF PELLETS ARE, HOWEVER, LOWER THAN THOSE OF SINTER, WHILE THE VOL. OF PELLETS SHOWS A GREATER INCREASE. A MAX. VOL. INCREASE AND STRENGTH DROP OCCUR WHEN HEMATITE BEGINS TO TRANSFORM INTO MAGNETITE. THE VOL. INCREASE OBSD. DEPENDS LARGELY ON THE STRUCTURE AND STRESS OF SAMPLES, RATHER THAN ON C PPTN. A 1.5 FOLD LOWER SWELLING ON H REDN. IS CAUSED BY THE DIFFERENT REDN. MECHANISM INVOLVED. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.64.547.341

LEVIN, YA. A., PYRKIN, R. I., YAGFAROVA, T. A., and USOL'TSEVA, A. A.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy
of Sciences USSR

"The Polymers and Copolymers of Divinylphosphinates"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15 (A), No 9, Sep 73,
pp 2070-2074

Abstract: The radical-chain block polymerization of derivatives of divinylphosphinic acid $(CH_2-CH)_2P(=O)X$ (I; $X = OMe, OEt, OPr, OPh, OC_8H_{17}, OCH_2CH_2CH_2Cl, OCH_2CH_2Br, NEt_2$) in the presence of azoisobutyric acid resulted in the formation of polymers with a tridimensional network, the properties of which ranged from those of elastomers to those of solids. Polymerization of I ($X = OEt$) in benzene resulted in the formation of a polymer with a tridimensional network, while that in EtOH led to a soluble cyclolinear oligomer. In the Copolymerization of I ($X = OEt$) with styrene or methyl methacrylate, I ($X = OEt$) was less reactive than the monomer that did not contain P, so that tridimensional and soluble polymers formed which contained less P in relation to styrene or methyl methacrylate than the initial monomer mixture.

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USSR

UDC 547.341

PYRKIN, R. I., LEVIN, Ya. A., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences, USSR

"Reactions in the System $C_2H_4-PBr_3-AlBr_3$ "

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1705-1713

Abstract: A complex of reactions in the system $C_2H_4-PBr_3-AlBr_3$ leads to the final products including β -bromoethyldibromophosphine, tetrabromophosphine, and a complex of bis- β -bromoethyltribromophosphorane. A reaction sequence is proposed which includes an electrophilic attack by a bromine atom of the ethylene at the positively charged phosphorus atom of the complex $BrCH_2CH_2^+PBr_3BrP^-AlBr_3$, which forms as a result of a nucleophilic attack of PBr on the α -carbon atom of the complex $BrCH_2CH_2PBr_2^+AlBr_3$. Ethylene enters the $BrCH_2CH_2PBr^+Al^-Br_4$ complex at the $P-Br$ bond. Synthesis of bis- β -bromoethylphosphinic acid and its esters was developed, based on the hydrolysis or alcoholysis of the complex $(BrCH_2CH_2)_2PBr_2^-AlBr_4^+$ forming directly in the system $C_2H_4-PBr_3-AlBr_3$.

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USSR

UDC 661.718.1+546.183.131+549.455+547.313.2

LEVIN, YA. A., and PYRKIN, R. I.

"Products of the Interaction of Ethylene with the Phosphorus Trichloride and Aluminum Chloride System and Some Transformations of Them"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 77-82

Abstract: In connection with certain stated contradictions [A. I. Titov, et al., DAN SSSR, No 159, 1964; L. Maier, Helv. Chim. acta, No 52, 1337, 1969] and studies made of the reactions in the system made up of ethylene, aluminum halides and a compound with phosphorus-halide bond [Y. A. Levin, et al., Materialy dokladov nauchnoy konferentsii IOFKh, Kazan', 30, 1968] resulting in a number of new types of organophosphorus compounds [Ya. A. Levin, et al., USSR Author's Certificate No 258306, Byull. izobr., No 1, 1970], some results are presented from studies of the interaction in the $C_2H_4-PCl_3-AlCl_3$ system. The reactions in this system lead to free β -chloroethyleichloro phosphine and a mixture of complexes on alcoholysis of which, diethyl phosphite, the monoethyl ester of β -chloroethyl phosphonic acid and bis- β -chloroethyl phosphonous acid are formed. A study was made of the transformations of β -chloroethyldichloro phosphine and bis- β -chloroethylphosphonous acid establishing the genetic relations of the compounds to one and two β -chloroethyl groups on the phosphorus atom.

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USSR

UDC 547.341.07

LEVIN, Ya. A., and PYRKIN, R. I., Institute of Organic and Physical
Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Derivatives of Divinylphosphinic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 578-581

Abstract: Reactions of divinylchlorophosphinate with alcohols, phenol, butyl mercaptan and diethylamine in presence of triethylamine yield esters, a thioester and an amide of divinylphosphinic acid. It is possible to combine the substitution of a chlorine atom by an alkoxyl group and dehydrobromination of bis- β -bromoethylphosphinic acid chloride into one reaction, yielding divinylphosphinates, by heating the reaction mixture to 70°; otherwise the principal product is an ester of vinyl- β -bromomethylphosphinic acid. Hydrolysis of the ethyldivinylphosphinate with aqueous solutions of sodium carbonate yields the sodium salt of divinylphosphinic acid. The ease of dehydrobromination depends on the substituents of the phosphorus atom.

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USSR

UDC 547.341.26'118.07

PYRKIN, B. I., and LEVIN, YA. A., Order of the Red Labor Emblem Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzova

"Process for the Preparation of Alkyl Esters of β -Bromoethylalkylphosphonous Acid"

USSR Author's Certificate No 362023, filed 24 Mar 71, published 13 Dec 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obratzys, Tovarnyye Znaki, No 2, 1973, p 54)

Translation: This process is improved in that the β -bromoethyldibromophosphine reacts with the brominated alkyls in the presence of aluminum bromide with subsequent treatment of the generated complex with alcohol. The desired product is separated by known methods.
2. The process described in number 1 is improved in that the reaction generating the complex occurs in an environment of inert organic solvents, for example, cyclohexane.

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UDC 547.241'223'212

USSR

LEVIN, Ya. A., and ~~PYRKIN~~, R. I., Institute of Organic and Physical Chemistry
Imeni A. Ye. Arbuzov, Acad. Sc. USSR, Kazan'

"Bromoethyl and Bis- β -bromoethyl Phosphorus Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 283-288

Abstract: Dehydrobromination of β -bromoethyldibromophosphine yields vinyl-dibromophosphine. Starting from β -bromoethyldibromophosphine syntheses were carried out of β -bromoethylphosphonous, bis- β -bromoethylphosphinic acids and a series of their derivatives. β -Bromoethyldibromophosphine undergoes P-ethylation in presence of the ethyl bromide-aluminum bromide complex.

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UDC 547.26'118'223.07

USSR

LEVIN, YA. A., and PYRKIN, R. I., "Order of the Red Banner of Labor Institute of Organic and Physical Chemistry imeni A. Ye. Arbuztov

"A Method of Producing Bis- β -Bromoethylphosphinic Acid"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 17, 1970, Author's Certificate No 270731, filed 22 May 69, p 23

Abstract: This Author's Certificate introduces: 1. A method of producing bis- β -bromoethylphosphinic acid based on phosphorus halide compounds. As a distinguishing feature of the patent, the process is simplified and the product yield is increased by using phosphorus tribromide as the phosphorus halide compound. The phosphorus tribromide is interacted with ethylene in the presence of aluminum tribromide with subsequent decomposition of the intermediate complex and isolation of the product by conventional methods. 2. The method described in (1) is distinguished in that the process is carried out first with cooling to 10-20° C, and then at a temperature of 30-45°C with subsequent heating to 100° C.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--WHIPLASH INJURIES OF THE CERVICAL AND UPPER THORACIC SPINE IN THE
EXPERIMENT AND CLINIC -U-
AUTHOR--(04)-YUMASHEV, G.S., GROMOV, A.P., DMITRIYEV, A.YE., PYRLINA, N.P.
COUNTRY OF INFO--USSR
SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 1-5
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SPINAL CORD, SPINAL NERVE, INJURY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605003/C05 STEP NO--UR/9115/70/000/006/0001/0005
CIRC ACCESSION NO--AP0139508
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139508

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EVIDENCE SHOWS THAT THE EXPERIMENTALLY PRODUCED "WHIPLASH" INJURIES OF THE CERVICAL AND UPPER THORACIC SEGMENTS OF THE SPINE, VESSELS AND NERVES LOCALIZE PRINCIPALLY AT THE LEVEL OF C SUB5 -TH SUB3. THEIR INTENSITY DEPENDS ON THE RATE OF OSCILLATION OF THE HEAD DURING "JERK" AND MAGNITUDE OF THE ARISING OVERLOADS. IN 23 PATIENTS OBSERVED BY THE AUTHORS FOLLOWING AUTOACCIDENTS, THE CLINICAL PICTURE IN SUCH "WHIPLASH" TYPE OF INJURIES WAS FOUND TO BE REPRESENTED BY A RANGE OF REGULARLY RECURRING SYMPTOMS OF A PATTERN WHICH GIVES REASON TO SPEAK ABOUT, TRAUMATIC CERVICAL WHIPLASH SYNDROME". THE AUTHORS COMMUNICATE THEIR SCHEME OF EXAMINATION OF PATIENTS AND THE METHODS OF TREATMENT APPLIED BY THEM.
FACILITY: KLINIKI TRAVMATOLOGII I ORTOPEDII I KAFEDRA SUDEBNOY MEDITSINY I MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM SECHENOVA.

UNCLASSIFIED

UDC 621.373:535.06

USSR

ARTIPOV, B. A., ZUYEV, V. YE., PYRSIKOVA, P. D., SAPOZHNIKOVA, V. A.

"Investigation of the Shape of the Methane Absorption Line Using a Laser Controlled by a Magnetic Field"

Leningrad, Optika i Spektroskopiya, No 6, Dec 71, pp 899-902

Abstract: The shape of the methane absorption line with center 2947.888 cm^{-1} at methane pressures from 1 to 6 mm Hg was investigated. It is noted that the resolution of existing spectral devices did not generally give a true picture of the shape of the absorption line. Studies of the distorted shape of the spectral line are of interest to spectroscopists since the shape of the line, more than any other parameter, is sensitive to various intermolecular and intramolecular interactions. A laser is suggested as very promising for the study of the true shape of the line, since the radiation line of the laser is close to the absorption line being studied and it can be tuned by the same method. A He-Ne laser with a wavelength of 3.39μ was used as a radiation source in studying the methane absorption line. The length of the laser resonator was 28 cm and the diameter of the discharge tube did not exceed 4 mm. The laser was

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EESR.

ANTIPOV, B. A. et al, Optika i Spektroskopiya, No 6, Dec 71,
pp 899-902

placed in a solenoid of length 76 mm where the magnetic field strength varied from 0 to 600 gauss. The length of the solenoid was three times the length of the gas tube in order to ensure a high homogeneity of the magnetic field inside the tube. Values of the integral intensity and the half-width of the line were found to be $1.1 \pm 0.1 \text{ atm}^{-1} \cdot \text{cm}^{-1}$ and $0.0045 \pm 0.0004 \text{ cm}^{-1}$, respectively. Both single-frequency and multimode helium-neon lasers were used in the measurements. It is claimed that the technique makes it possible to study the effect of partial pressures of various gases, temperature, and total pressure on the change in monochromatic absorption coefficients at the center of the line and at various distances from it. A comparison of experimental and calculated values shows that the shape of the methane absorption line obtained in the experiment may be considered practically undistorted.

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USSR

UDC: 621.762.3:669.15(008.8)

TIKHONOV, G. F., PYRYALOV, L. A.

"Method of Treatment of Powdered Material"

USSR Author's Certificate Number 341600, Filed 25/09/70, Published 7/07/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G399P).

Translation: A method is presented for processing of powdered material, for example stainless steel powders, with solutions of inorganic compounds. In order to improve the technological properties of the powders, they are treated with an aqueous solution containing nitric acid and a halide salt of an alkali metal, then neutralized with a solution of caustic soda, washed with water and dried. The powders are treated with an aqueous solution containing $\leq 80\%$ nitric acid in 2-4% alkali metal halide.

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USSR

UDC:621.762.04

TIKHONOV, G. F., PYRYALOV, L. A., SOROKIN, V. K., NIKOLAYEV, A. N.,
KHROMOV, V. G. and SHMELEV, L. S., Gor'kiy Polytechnical Institute

"Production and Properties of Porous Rolled Products"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 85-89

Abstract: The method of direct rolling of powders has been used to develop processes for producing porous sheets designed for use as permeable materials and fine filters. The properties of porous permeable rolled sheets made of stainless steel, titanium, nickel and nichrome are presented in tabular form. Studies performed have developed several types of filtering materials with nominal filtrations of 2, 5 and 10 μ .

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USSR

UDC 621.762.4

TIKHONOV, G. F., PYRYALOV, L. A., SIVOV, A. V.

"Application of Surface-Active Substances When Obtaining Porous Rolled Products"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 14-17 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G450)

Translation: On introducing surface-active substances, for example, machine oil and glycerine, into Fe, Cu, Ni, nichrome, stainless steel, and other powders, it becomes possible to roll a bimetallic strip from the powders differing sharply with respect to its properties whereas mixtures of different powders without surface-active substances give strips with very high bend after rolling with a difference in friction coefficients of these powders of more than 10-13%. The article contains 4 tables and a 4-entry bibliography.

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1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--A COMPARATIVE ASSESSMENT OF SOME MATERIALS EMPLOYED FOR THE
PROTECTION OF SILICATE FILLINGS FROM THE DISSOLVING EFFECT OF THE ORAL
AUTHOR--(02)-MITINA, V.I., PYRYEVA, R.A. P

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 62-64

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SILICATE, DENTAL MATERIAL, CELLULOID, SHELLAC, LACQUER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0216

STEP NO--UR/0511/70/049/003/0062/0064

CIRC ACCESSION NO--AP0120914

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120914

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. UNDER STUDY WAS THE INFLUENCE OF SOME ISOLATING MATERIALS ON THE SOLUBILITY AND MECHANICAL RESISTANCE OF SILICIN AND SILIDONT CEMENTS. THE AUTHORS ARRIVED AT THE CONCLUSION THAT FOR THE MAXIMAL REDUCTION OF THE SOLUBILITY OF THE SILICIN CEMENT IT IS NECESSARY TO ISOLATE THE FILLING FROM MOISTURE FOR NOT LESS THAN THREE HOURS, AND SILIDONT CEMENT, NOT LESS THAN ONE HOUR. FOR THE PROTECTION OF FILLINGS ONE MAY EMPLOY WAX, VASELINE AND SHELLAC CELLULOID LACQUER. FACILITY: OTDEL TERAPEVTICHESKOY STOMATOLOGII I LABORATORIYA MATERIALOV DENIYA ODESSKOGO N-I INSTITUTA STOMATOL.

UNCLASSIFIED

Acc. Nr: **AP0047181**

Ref. Code: **UR0511**

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 25-27

CEMENTS

- SOME INDICES OF THE PROPERTIES OF DENTAL

Mitina, V. I.; Pyr'veva, B. A.

Summary. Under investigation was the influence of temperature, humidity and time on the volume, hardness, resistance to compression, viscosity and detrition of dental cements — silicin and silident.

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It is shown that the air casing of a charge has a significant effect on practically all the parameters of a wave disturbance propagating in the ground from an explosion. The characteristic wave processes in ground masses from explosions by air-casing charges can be used for calculating explosion effects when cutting through mine workings and other underground structures in compressible soil.

Inegamov, I. I., and F. N. Pyri.

Destruction mechanism of rocks from explosions, IAN USSR, Ser. tekhn. nauk, no. 3, 1972, 77-80.

Soviet research on the mechanism of rock destruction by explosive action is surveyed. Vlasov et al (IAN USSR, 1962) showed that an approximate solution of explosion problems can be obtained by assuming that transmission of the explosion energy to the surrounding medium is instantaneous, and that the medium is incompressible. Principles were developed on this basis for the calculation of rock fragmentation by an explosion. The granulometric composition of the blown-up rock mass can consequently be theoretically determined by the classical mechanics, and the fragmentation action of cylindrical charges can be calculated. However, the only changes and deformations taking place in the medium which can be evaluated using this model of the rock-fragmentation process, are the end results of explosive action.

Gukhanov (IN: Sbornik, Voprosy teorii razrusheniya gornykh porod vzyva. IAN USSR, 1958) proposed a formula for taking into account the resistance of rock to separation along the lateral surface of the explosion funnel, and the passage of the gravitational forces of the rock within the funnel. Khanukayev suggested (IN: Energiya voln

Pyri
F.N.

USSR

UDC 622.235.2

INOAMOV, I. I., PYS', F. N.

"Methods of Increasing the Energy of an Explosion"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, No 3, 1970, pp 50-52

Abstract: The article deals with methods for breaking up rock in mining operations, which increase the efficiency of the explosion. In an explosion, there is a lag between the application of a load upon the medium and its destruction, depending upon the physical and mechanical properties and upon the duration of the explosive impulse. The intensity of the process of rock breakup increases with an increase in the duration of the explosive impulse. Thus, the basic physical factor affecting the intensity of rock breakup under the action of an explosion is the time of application of the explosive impulse. A formula is given to describe the process of the explosive decomposition of a high-explosive charge in a rock borehole. Methods of increasing the duration of the explosion are briefly described. It is found that methods for increasing the efficiency of the explosion energy considerably improve the degree and uniformity of rock pulverization, and increase the productivity of mining and transport equipment.

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USSR

UDC 576.8.095:622.323

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GOL'DENBERG, A. M., KVASNYKOV, YE. I., BOYKO, M. M., LYUBCHIKOVA, O. H.,
PAVLENKO, M. I., PYSARCHUK, YE. M., and KHYZHENYAK, O. O., Ivano-Frankovsk
Central Scientific Research Laboratory, and Institute of Microbiology and
Virology, Academy of Sciences UkrSSR

"Biochemical Processes During Oil Displacement Under the Influence of Bacteria
in Model Experiments"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 234-239

Abstract: Introduction of selected cultures of gas-forming bacteria from the
genus Clostridium together with a molasses medium into an artificial model
of an oil-bearing bed (sand saturated with oil) results in higher displace-
ment of oil as compared to the control (without addition of bacteria). Most
crucial changes in the medium enriched with bacteria occur in 5-7 days at an
optimum temperature of 30°C, that is during the period of most intensive
changes in the nutrient medium and maximum gas production. At that time the
surface tension at the interphase culture medium-air is lowered, the amount
of organic acids and ethanol is increased and the pH of the medium is lowered.
The specific gravity of the oil exposed to bacteria is lowered by 0.0018-
0.0096 g/cm³, and its viscosity is lowered by 0.51-3.02 cst, without any
changes in its fractional composition.

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USSR

UDC 53.07/.08+53.001.5

MOROZ, YE. M., MOLCHANOV, S. S., ~~RYSHKIN, B. N.~~, SOLOV'YEV, N. S., Physics Institute imeni P. N. Lebedev

"A Method for the Stabilization of Synchrotron Radiation Intensity"

USSR Author's Certificate No. 256117, Filed 26 Jun 68, published 31 Mar 70
(from RZh-Fizika, No 1, Jan 71, Abstract No 1A453 P)

Translation: Precise (or programmed) switching on of accelerating field voltage is necessary to stabilize and raise the level of beam intensity in a synchrotron. It is proposed that the time of switching on be controlled with the aid of a pulse of a current of particles circulating in orbit at the time of injection in each acceleration cycle. This made it possible to increase intensity by 20% as compared with circuits connecting the switching on to the level of the magnetic field. V. Papadichev.

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Communications

USSR

UDC: 621.391.833

PYSHKIN, I. M.

"Coherent Reception of Discrete Information in Non-Gaussian Noise, Part 1"

Moscow, Radiotekhnika, No 10, 1972, pp 13-23

Abstract: This article is the first part of a theoretical investigation of the coherent reception of discrete signals, but is in a sense the follow-up of an earlier article by the same author in the same journal (No 2, 1971) analyzing the action of pulse noise on a discrete communication system with the interfering signal amplitude constant for a time varying from zero to the full extent of the signal duration without taking into account the randomness of the overlap time of the useful and interfering signals. These same limitations apply to the current article, in which it is further assumed that the distribution of the moments of appearance of the interfering signal is subject to the Poisson law while the intensity of the interference is characterized by the average number of interfering signals in the useful signal duration. An expression is obtained for the total error in the reception of binary symbols $1/2$

USSR

PYSHKIN, I. M., Radiotekhnika, No 10, 1972, pp 13-23

and orthogonal signals, and the threshold voltage at which the total error is a minimum is found. The author expresses his gratitude to L. Ye. Barakin and B. F. Abramov for their assistance.

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1/2 046 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--GENERATION OF A LONGITUDINAL ELECTRIC FIELD IN CDS BY INTENSE LASER
IRRADIATION -U-
AUTHOR-(03)-VLADIMIROV, V.I., PYSHKIN, S.L., FERDMAN, N.A.
COUNTRY OF INFO--USSR
SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 1, PP 207-215
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, ELECTRIC FIELD, LASER RADIATION,
PIEZOELECTRIC CRYSTAL, BOLTZMANN DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1729

STEP NO--GE/0030/70/039/001/0207/0215

CIRC ACCESSION NO--AP0112722

UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112722

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER IS CONCERNED WITH THE INVESTIGATION OF LONGITUDINAL ELECTRIC FIELDS (IS APPROXIMATELY EQUAL TO 1 V-CM) ARISING IN A HOMOGENEOUS PIEZOELECTRIC CRYSTAL AT HIGH LEVEL OF OPTICAL EXCITATION. THE SIGN OF THE EFFECT CORRESPONDS TO THE DRAG OF FREE CARRIERS (ELECTRONS IN THE CASE OF QDS) IN THE DIRECTION OF LIGHT PROPAGATION. THE MAGNITUDE OF THE EFFECT AND ITS KINETICS HAVE BEEN RELATED TO LIGHT INTENSITY, TEMPERATURE, CRYSTAL ORIENTATION, AND THE DISTANCE BETWEEN THE PROBE POINTS. THE EFFECT IS ASSUMED TO BE A RESULT OF THE GENERATION OF A PHONON PACKET, REFERRED TO BY THE AUTHORS AS ACUSTOOPTICAL DOMAIN, AND CARRIER DRAG BY THIS DOMAIN. CALCULATIONS BASED ON THE BOLTZMANN EQUATION FOR THE ELECTRON DISTRIBUTION FUNCTION GIVE A REASONABLE PHONON DENSITY INSIDE THE DOMAIN WHICH IS NECESSARY FOR GENERATING THE ELECTRIC FIELD OBSERVED. THE ESTIMATIONS BASED ON THE CALCULATED PHONON DENSITY SHOW THAT CONSIDERABLE MECHANICAL STRESSES EXIST IN THE DOMAIN AREA WHICH CAN RESULT IN THE DESTRUCTION OF THE CRYSTAL WHEN INCREASING THE LIGHT INTENSITY; SO FAR THE EFFECT EXAMINED CAN BE DIRECTLY RELATED TO THE PROBLEM OF OPTICAL STRENGTH.

FACILITY: A. F. IOFFE PHYSICO-TECHNICAL INSTITUTE, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD. FACILITY: INSTITUTE OF APPLIED PHYSICS, MOLDAVIAN ACADEMY OF SCIENCES, KISHINEV.

UNCLASSIFIED

USSR

UDC: 621.373:530.145.6

DAMASKIN, I. A., KOVARSKIY, V. A., PYSHKIN, S. I., RADAUTSAN, S. I., FERDMAN, N. A., and TEZLEVAN, V. Ye.

"Luminescence of CdIn₂S₄ Monocrystals in the Excitation of Ruby Laser Light by Giant Pulses"

V sb. Issled. slozhn. poluprovodnikov (Investigating Complex Semiconductors--collection of works) Kishinev, 1970, pp 85-89 (from RZh-Radiotekhnika, No. 3, March 71, No. 3, Abstract No. 3D312)

Translation: The results are given of an investigation of CdIn₂S₄ monocrystals in two-photon optical excitation. With an excitation intensity of about $8 \cdot 10^{25}$ kV/cm²sec, a narrow intense band at 660 nm is detected in the luminescence spectrum, whose half-width decreases substantially with increasing intensity of the excitation light. The detected phenomenon is interpreted as forced radiation in the so-called phononless line. Estimates of the luminescence spectrum half-width are obtained and a model of the detected phenomenon is proposed. Four illustrations, bibliography of eight. Author's abstract.

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USSR

UDC 535.215.1:621.383.4

KORZINKIN, V. A., and PYSHKINA, N. I.

"Limiting Characteristics of Semiconductor Photodetector With Traveling Wave and Carrier Drift"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in the Technology of Electrical Communications), Issue 7, Moscow, "Svyazi," 1971, pp 210-218 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B259)

Translation: An evaluation is conducted of the limiting parameters of a semiconductor photodetector with a traveling wave and a carrier drift charge. A value of 10^{10} Hz is obtained for the limiting frequency band. A calculation is made of the power losses in the photodetector and an evaluation is achieved of the maximum value of the product of the amplification factor G and the width of the frequency band π . The values $G \pi = 10^{12} \text{ -- } 10^{13}$ Hz are obtained. It is shown that in the case of small losses (high-resistance semiconductors, low temperature) the magnitude of $G \pi$ may be increased because of the increased length of the retarding system of the photodetector. V.L.

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USSR

UDC 621.376.234

KORZINKIN, V. A., and PYSHKINA, N. I.

"Limiting Characteristics of a Semiconductor Photodetector With Traveling Wave and Carrier Drift"

Poluprovodnikovyye Pribory v Tekhnike Elektrosvyazi (Semiconductor Instruments in Electrical Communication Technology), Moscow, "Svyaz'," No 7, 1971, pp 210-218

Abstract: This article contains a full list of conventional symbols used by the authors in treating the problem. Using a mathematical approach and supporting their findings graphically the authors make several conclusions regarding a solution. They find that the maximal frequency band of the device is 10^{10} Hz. The method they used for computing losses, under the condition that the space factor of the medium is introduced for the semiconductor, gives values which agree with the experimental ones for the solid-state analog of the traveling-wave tube. They find that by allowing for the losses they are able to estimate the maximal value for the area of amplification as 10^{12} - 10^{13} Hz. For small losses (high-resistance semiconductor and low temperatures) they find it is possible to increase the area of amplification by

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USSR

KORZINKIN, V. A., and PYSHKINA, N. I., Poluprovodnikovyye Pribory v Tekhnike Elektrosvyazi (Semiconductor Instruments in Electrical Communication Technology), Moscow, "Svyaz'," No 7, 1971, pp 210-218

increasing the length of the delay system. The article contains 2 illustrations and 14 bibliographic entries.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SOME RESULTS OF CLOCK CORRECTIONS DETERMINATIONS FROM OBSERVATIONS
OF PAIRS OF STARS SITUATED SYMMETRICALLY AROUND THE ZENITH -U-
AUTHOR--PYSHNENKO, V.N.
COUNTRY OF INFO--USSR
SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 3, 1970, P. 633-640
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, METHODS AND EQUIPMENT
TOPIC TAGS--CLOCK, STAR, ERROR CORRECTION, TIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/D07 STEP NO--UR/0033/70/047/003/0633/0640
CIRC ACCESSION NO--AP0140400

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140400

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT IN THE DETERMINATIONS OF CLOCK CORRECTIONS BY MEANS OF PAIRS OF STARS SITUATED SYMMETRICALLY AROUND THE ZENITH (A. A. MENIRO'S METHOD), THE SYSTEM OF CORRECTIONS IS RETAINED BETTER, AND THE MEAN ERROR OF CLOCK CORRECTIONS IS DECREASED MORE CONSIDERABLY IN COMPARISON WITH USUAL METHODS. THE FORMULAS ARE OBTAINED FOR THE DETERMINATION OF CLOCK CORRECTIONS BY D. D. GEDEONOV'S METHOD WITH TWO STARS ONLY, AS WELL AS WITH A PAIR OF STARS FOR THE CASE OF LOWER CULMINATION FOR A. A. MENIRO'S METHOD. FACILITY: GLAVNAIA ASTRONOMICHESKAIA OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—ADSORPTION AND ELECTROOXIDATION OF METHANOL ON DIFFERENT FACES OF
PLATINUM SINGLE CRYSTAL -U-
AUTHOR—(03)—VASILYEV, YU.B., PYSHNOGRAYEVA, I.I., BAGUTSKIY, V.S.
COUNTRY OF INFO—USSR
SOURCE—ELEKTROKHIMIYA 1970, 6(3), 433-6
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—ADSORPTION, ELECTROLYTIC OXIDATION, METHANOL, PLATINUM, SINGLE
CRYSTAL
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0651 STEP NO—UR/0364/70/006/003/0433/0436
CIRC ACCESSION NO—AP0124323
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124323

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TESTS WERE CONDUCTED WITH MEOM
SOLNS IN N H SUB2 SO SUB4 FOR VARIOUS CRYSTALLOGRAPHIC ORIENTATIONS.
EXPTL. DATA REVEALED THAT WITH RESPECT TO MEOM ADSORPTION, DEHYDRATION,
AND OXIDN. REACTIONS, THE ELECTROCATALYTIC ACTIVITY OF A PT ATOM AT THE
FACE OF THE SINGLE CRYSTAL WITH THE DENSEST PACKING IS SOMEWHAT HIGHER,
PROBABLY BEING INFLUENCED BY ITS NEIGHBORS, THAN FOR THE OTHER FACES.
THE BOUNDARIES OF THE GRAINS AND THE ANGLES AND FACES OF PARTICULAR
CRYSTALS ON THE POLYCRYST. SURFACE DO NOT HAVE ANY EFFECT ON CATALYTIC
ACTIVITY. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF CRYSTALLOGRAPHIC ORIENTATION ON THE OVER VOLTAGE OF
HYDROGEN AND OXYGEN LIBERATION ON PLATINUM -U-
AUTHOR-(04)-PYSHNOGRAYEVA, I.I., SKUNDIN, A.M., VASILYEV, YU.6.,
BAGOTSKIY, ~~V.S.~~
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6(1), 142-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PLATINUM ELECTROCHEMISTRY PROPERTY, SINGLE CRYSTAL PROPERTY,
CRYSTAL ORIENTATION, GAS PROPERTY, HYDROGEN, OXYGEN, ACID CORROSION,
SULFURIC ACID, ELECTRODE POTENTIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0765 STEP NO--UR/0364/70/006/001/0142/0146
CIRC ACCESSION NO--AP0104211
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EVOLUTION OF H AND O IN N H SUB2 SO SUB4 SOLN. ON THE VARIOUS FACES OF A PT MONOCRYSTAL AND ON POLYCRYSTALS WAS STUDIED. THE EVOLUTION OF H WAS SIMILAR ON THE VARIOUS FACES OF THE MONO AND POLYCRYSTAL, HOWEVER, THE RATE OF THE PROCESS DECREASED IN THE FOLLOWING ORDER: FACE (111) IS GREATER THAN POLYCRYSTAL IS GREATER THAN FACE (100). EXCHANGE CURRENT COMPUTED PER 1 CM PRIME² OF ACTUAL ELECTRODE SURFACE ALSO DECREASES IN THE SAME ORDER. IN GOING FROM FACE (111) TO FACE (100) THE MAGNITUDE OF EXCHANGE CURRENT CHANGES BY ALMOST 1 ORDER. THE ACTUAL ENERGY OF ACTIVATION REMAINED PRACTICALLY UNCHANGED BY CHANGING CRYSTALLOGRAPHIC ORIENTATION. THE EVOLUTION OF O DID NOT CHANGE BY CHANGING THE ORIENTATION OF THE CRYSTAL, HOWEVER THE RATE OF EVOLUTION AND THE EXCHANGE CURRENT DECREASED IN THE SAME SEQUENCE AS DID H. BY GOING FROM FACE (111) TO FACE (100) THE CURRENT DROPS FOR O BY A FACTOR OF 5. THUS, CATHODIC EVOLUTION OF H AND ANODIC EVOLUTION OF O DROPS CONSIDERABLY WHEN GOING FROM A TIGHTLY PACKED CRYSTAL FACE TO A FACE PACKED LESS TIGHTLY. A PT POLYCRYSTAL OCCUPIES A POSITION BETWEEN THESE 2 FACES.

UNCLASSIFIED

USSR

UDC: 621.373.431(088.8)

PYSHNOV, A. V.

"A Square Pulse Generator"

USSR Author's Certificate No 262158, filed 5 Jan 68, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G176 P)

Translation: This Author's Certificate introduces a square pulse generator which consists of a staggered pulse generator, a power supply, a charge-limiting resistor, a charging capacitor, an actuating thyatron, a transformer and a quenching circuit. To cut down the duration of transient processes, the plate of the actuating thyatron is connected directly to the charging capacitor, while the load and the secondary winding of the transformer are connected in series with the cathode of the actuating thyatron. The secondary winding of the transformer is shunted by an additional thyatron which is triggered simultaneously with the actuating thyatron.

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USSR

UDC: 621.373.431

PYSHNOV, A. V.

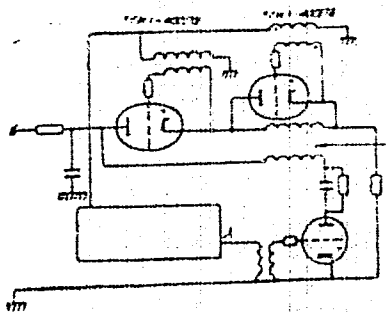
"A Square Pulse Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzysy, Tovarnyye Znaki, No 6, 1970, p 32, patent No 262158, filed 5 Jan 68

Abstract: This Author's Certificate introduces a square pulse generator which consists of a shifted-pulse generator, a power supply, a charge-limiting resistor, charging capacitor, actuating thyatron, transformer and quenching circuit. As a distinguishing feature of the patent, the duration of transient processes is reduced by connecting the plate of the actuating thyatron directly to the charging capacitor while the load and the secondary winding of the transformer are connected in series with the thyatron cathode. The transformer secondary is shunted by an additional thyatron which is triggered simultaneously with the actuating thyatron.

USSR

PYSHNOV, A. V., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 32, patent No 262158, filed 5 Jan 68



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25 4R9007

AUTHORS--

ANOKHIN, S., AND GALLAY, M., MERITORIOUS TEST PILOTS,
U.S.S.R., KUPFER, M., AND GRIBOVSKIY, V., AIRCRAFT
DESIGNERS, ~~ASBILIN, B.~~ AND PYSHNOV, V., MERITORIOUS
SCIENTISTS AND ENGINEERS, RAUSHENBAXH, V., CORRE-
SPONDING MEMBER OF THE ACADEMY OF SCIENCES, AND
KOSTENKO, I., CANDIDATE OF TECHNICAL SCIENCES

TITLE--

WINGS FOR THE IMPOSSIBLE DREAM

NEWSPAPER--

KOMSOMOL, SKAYA PRAVDA, JANUARY 15, 1970, P 2, COLS 3-6

ABSTRACT--

THE AUTHORS ARE PROPOSING THE ESTABLISHMENT OF AN INTER-
AGENCY COMMISSION ON GLIDERS AND SMALL-ENGINE PLANES
WHICH WOULD GUIDE AND COORDINATE ALL THE ACTIVITIES
CONNECTED WITH DO-IT-YOURSELF AIRCRAFT.

19570712

1/2 024
UNCLASSIFIED
TITLE--PLASTIC RECONSTRUCTION OF THE CRANIAL VAULT TRAUMATIC DEFECTS UNDER
CONDITIONS OF SURGICAL DEPARTMENTS -U-
AUTHOR--(03)-GIRSHOVICH, YE.I., LUCHKO, G.D., PYSHNOVA, M.A.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP
126-129
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CEREBRUM, ORTHOPEDIC SURGERY, BONE GRAFT, ORGANIC GLASS,
PLASTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0043
CIRC ACCESSION NO--AP0105142
STEP NO--UR/0589/70/104/004/0126/0129
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105142

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 33 PATIENTS WITH CRANIOCEREBRAL INJURIES VARIOUS KINDS OF CRANIAL DEFECTS PLASTY WERE EMPLOYED (LOCAL, GRAFTS FROM THE ORGANIC GLASS AND STYRACRYL). PRIMARY PLASTY WAS PERFORMED IN 25 PATIENTS. PRIMARY ALLOCRANIOPLASTY COULD BE SUCCESSFULLY USED IN NON SPECIALIZED DEPARTMENTS, TO DATE, HOWEVER, LOCAL BONE PLASTY IS STILL OF MAJOR IMPORTANCE.

UNCLASSIFIED

USSR

UDC 612.76

PYSHOVA, V. A., Sector of Biochemistry, Leningrad Scientific Research Institute of Physical Culture

"The Significance of the Magnitude of Work Load Increments for Adaptation of the Body to Intensive Muscular Activity"

Leningrad, Fiziologicheskii Zhurnal SSSR, Vol 58, No 4, 1972, pp 534-539

Abstract: Rats were subjected to physical training which began with 5 mins of swimming per day and continued for 40 days with swimming time prolonged according to three schedules: a 1-min increment added each day 5 days per week (group 1), a 5-min increment added once per week (group 2), and a 10-min increment added once every 2 weeks (group 3). Chemical analyses revealed that the concentration of glycogen and creatine phosphate as well as the activity of cytochrome oxidase in skeletal muscles and myocardium increased in groups 2 and 3 much faster than in group 1; while immediately after swimming, the reserves of these compounds were depleted much less and lactic acid concentration in blood was much smaller than in group 1. Similarly, rats in intensive training gained body weight at a faster rate than controls. The best results were achieved in group 2. It is concluded that large (but no excessive) increments in work load are most effective in increasing the body's physical potential.

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USSR

UDC 535.376 + 535.377 + 537.226.8

GOL'DMAN, A. G., PYSHNYI, M. M., and PROSKURA, A. I., Institute of Physics, Academy of Sciences Ukrainian SSR, Kiev

"Excitation Spectrum of Cadmium Selenide Photoconductivity and Stimulated Conductivity at 77° K"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 3, Mar 71, pp 503-505

Abstract: Soviet photoresistors of the FS-D1 type were used to study the excitation spectra of cadmium selenide photoconductivity and stimulated conductivity at 77° K in the 500-1250 nm region. It was found that stimulated conductivity builds up to saturation under light excitation of any wavelength between 700 and 1100 nm. The current stimulated to saturation in cadmium selenide cells does not depend on the excitation wavelength between 700 and 1100 nm. The red stimulation boundary is situated near 1200 nm. In the photoconductivity spectrum the photoconductivity peak is situated around 800 nm and the red boundary near 1050 nm.

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P
UDC 535.367+ 535.377 + 537.226.8

GOLDMAN, A. G., PYSHNYI, M. M., Institute of Physics, Academy of Sciences, Ukr. SSR

"Variation of Stimulated and Nonstimulated Current in Polycrystalline CdSe with Temperature at 77-273°K"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 1, 1 July 1970, pp 65-68

Abstract: In FS-D0 and FS-D1 polycrystalline powdered CdSe photo-conductor cells a stimulation effect was displayed which was of the same order of magnitude as that found in investigations of specific CdS monocrystals described in the literature. With the FS-D0 tablet, the ratio of the stimulated to the unstimulated current measured at a temperature of 155°K equalled 10^8 and there was a considerable intensification of this ratio with a further reduction of temperature. The stimulated current in the temperature range 77 to 273°K was found not to depend on the temperature. Curves in logarithmic coordinates are shown for the volt-ampere characteristics of polycrystalline CdSe at temperatures of 77°, 155°, 186°, 237°, and 273°K. In the portion 1/2

USSR

GOL'DMAN, A. G., et al, Doklady Akademii Nauk SSSR, Vol 193, No 1, 1 July 1970, pp 65-68

< 100 the logarithmic curves for nonstimulated currents have an approximately linear form: i.e., the current is found to depend, in a degree, on the voltage, and this degree increases with a decrease of temperature. The dependence of $\log I$ of nonstimulated currents on T^{-1} in polycrystalline CdSe is also shown. 2 fig. 14 ref. Received by editors, 5 Nov 1969.

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- 70 -

1/2 014
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--KINETIC EQUATION OF A SUBS FORMS AND IS FORMED FROM B SUBS PLUS C
SUBG TYPE OF THERMAL DECOMPOSITION REACTIONS OCCURRING IN THE DIFFUSION
AUTHOR--PYSIAK, J.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(2), 131-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION KINETICS, THERMAL DECOMPOSITION, MATHEMATIC
EXPRESSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/2067
STEP NO--UR/0250/70/014/002/0131/0133
CIRC ACCESSION NO--AT0122296
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL KINETIC EQUATION WAS PREVIOUSLY DERIVED FOR THE REACTION OF THERMAL DECOMP. OF SOLIDS OF THE TYPE A SUBS IN EQUILIBRIUM B SUBS PLUS C SUBG. THIS GENERAL EQUATION IS APPLIED TO THE SPECIFIC CASE OF THE THERMAL DECOMP. IN THE DIFFUSION KINETIC REGION, I.E., AN INTERMEDIATE REGION IN WHICH THE CONCURRENT LIMITING PHASES ARE THE CHEM. REACTION AND THE DIFFUSION OF GASEOUS PRODUCT IN THE LAYER OF THE SOLID PRODUCT. THE KINETIC EQUATION FOR THIS INTERMEDIATE REGION IS DERIVED. THE APPLICABILITY OF THIS EQUATION IS CHECKED ON THE EXAMPLE OF DEHYDRATION OF NA SUB3 NIP SUB3 O SUB10. 12H SUB2 O, A PROCESS KNOWN TO HAVE A LONG INTERMEDIATE REGION. FIRST, EQUATIONS FOR PURELY KINETIC AND DIFFUSIONAL REGIONS WERE UTILIZED TO DERIVE THE RESP. RATE CONSTS. ARRHENIUS CURVES GAVE THE EXPTL. ACTIVATION ENERGIES E_{SUB1} EQUALS 9000 FOR KINETIC, AND $E_{SUB2 \text{ PRIME}}$ ($E_{SUB2 \text{ PRIME}} \text{ EQUALS } 2E_{SUB2}$) EQUALS 11,800 CAL-MOLE FOR THE DIFFUSION REGION. PREEXPONENTIAL FACTORS WERE 3.0 TIMES 10^{PRIME4} AND 4.8 TIMES 10^{PRIME5} , RESP. THESE RESULTS WERE THEN UTILIZED IN THE KINETIC EQUATION DERIVED FOR THE INTERMEDIATE DIFFUSION KINETIC REGION. THE CORRELATION DIAGRAM, COMPARING THE SO OBTAINED AND THE EXPTL. DATA FOR THE DEHYDRATION REACTION STUDIED, SHOWED A GOOD AGREEMENT. THE CALCD. DEGREE OF CONVERSION DID NOT DIFFER FROM THE EXPTL. DEGREE OF CONVERSION BY MORE THAN PLUS OR MINUS 9.5PERCENT. FACILITY: VARSHAV. POLITEKH. INST., WARSAW, POLAND.

UNCLASSIFIED

USSR

UDC: 681.332.65

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SELIVERSTOV, A. I., BELOV, L. I., LEDOVSKIY, V. N., ~~and others~~ PYSIN, V. D., AFANAS'YEV, V. I.

"A Random Pulse Sequence Generator"

USSR Author's Certificate No 284022, filed 23 Dec 68, published 23 Dec 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B217 P)

Translation: The device is designed for generating random electrical signals which have predetermined statistical characteristics and shaping pulses which are random with respect to times of appearance, duration, and amplitude. The generator can be used in mathematical modeling of various natural phenomena, technical devices, etc. Well-known random pulse sequence generators contain a source of noise which sends signals to a mixer through two channels, one of which contains two series-connected, transistorized blocking generators, while the other contains a transistorized blocking generator, a peak detector, and a smoothing filter. However, such generators are constructed on the principle of multiple amplification and limitation of the noise voltage from above and below, which causes appreciable complica-

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SHELIVERSTOV, A. I., Soviet Patent No 284022

tion of the device; besides this, a change in the pulse repetition frequency in such devices inevitably leads to a change in the duration of these pulses, which is undesirable in a number of instances. The proposed device is distinguished as follows: A delay element is connected through a two-pole switch between the transistors of the blocking generators in the first channel. A controlling transistor is connected in the emitter circuit of the transistorized blocking generator in the first channel, whose output is connected to the mixer. A control signal from the smoothing filter in the second channel is sent to the base of the transistor, resulting in independent regulation of the number of pulses per unit of time and their pulse length. One illustration.

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AN0040379

P

NR 9012

TITLE-- ETERNAL RELATIONSHIP

NEWSPAPER-- PRAVDA, MARCH 31, 1970, P 6, COLS 1-8

ABSTRACT-- I. N. FRANTSEVICH, DIRECTOR, THE INSTITUTE OF MATERIAL SCIENCE PROBLEMS, MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES -
V. M. TUCHKEVICH, DIRECTOR, THE PHYSICAL-TECHNICAL INSTITUTE, CORRESPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES -
E. L. ANDRONIKASHVILI, DIRECTOR, THE INSTITUTE OF PHYSICS, MEMBER OF THE GEORGIAN ACADEMY OF SCIENCES - I. N. PYSTYNSKIY, HEAD OF A CHAIR, TOMSK INSTITUTE OF RADIOELECTRONICS AND ELECTRONIC ENGINEERING - PARTICIPANTS OF THE "ROUND TABLE" PRAVDA-SPONSORED DISCUSSION, EXPRESS THEIR VIEWS ON THE COLLABORATION BETWEEN SCIENTISTS AND INDUSTRY.

FRANTSEVICH STRESSED THE DESIRABILITY OF DESIGN BUREAUS AND PILOT PLANTS IN THE STRUCTURE OF RESEARCH INSTITUTES.

19741827

AN0040379

TUCHKEVICH ILLUSTRATED HIS POINT BY CITING THE COLLABORATION BETWEEN HIS INSTITUTE, THE ENERGETICS INSTITUTE, AND SOME UNNAMED PLANT ENGINEERS THAT WAS NECESSARY TO DEVELOP A SEMICONDUCTOR FREQUENCY CONVERTER.

ANDRONIKASHVILI MENTIONED A CAPACITANCE-DISCHARGE CHAMBER, DEVELOPED BY HIS INSTITUTE, WHICH CAN COMPETE, IN SOME INSTANCES, WITH THE HYDROGEN BUBBLE CHAMBER.

PUSTYNSKIY CITED THE PTU-8G, AN INSPECTION TV CAMERA, "TELEGLAZ", WHICH WAS MADE BY HIS INSTITUTE ON THE ORDER AND WITH THE ASSISTANCE OF THE INSTITUTE OF MINING OF THE SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES. THE LETTER G IN THE DESIGNATION STANDS FOR "MINING". THE LATEST, THE TENTH "TELEGLAZ", IS THE SMALLEST MODEL WHOSE TV CAMERA IS FITTED IN A METAL CYLINDER 25-MM IN DIAMETER. IN THE FIELD, THE CAMERA CAN BE POWERED BY A 12-VOLT BATTERY. THIS INSTRUMENT WAS ALSO MADE IN THE SHOPS OF THE INSTITUTE. OTHER INSTRUMENTS MADE BY THE TOMSK INSTITUTE OF RADIOELECTRONICS AND ELECTRONIC ENGINEERING HAVE FOUND USES IN AVIATION AND CHEMICAL PLANTS AND THE INSTITUTE OF ATOMIC ENERGY IMENI KURCHATOV.

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19741828

Acc. Nr.

AP0105540

Abstracting Service:
CHEMICAL ABST.

P
C 70

Ref. Code
UR0419

125458y Effect of water vapor on the dehydration of $\text{NiNa}_2\text{P}_2\text{O}_7 \cdot 12\text{H}_2\text{O}$. Pavlyuchenko, M. M.; Pysyal, Ya. S.; Zonov, Yu. G.; Prodan, E. A. (Inst. Obshch. Khim., Minsk, USSR). *Vestn Akad. Nauk Belarus, SSR, Ser. Khim. Nauk* 1970, (1), 29-37 (Russ). The kinetics were studied of low-temp. dehydration of $\text{NiNa}_2\text{P}_2\text{O}_7 \cdot 12\text{H}_2\text{O}$ in an atm. of water vapor at pressures of 2.6, 4.6, 7.4, and 13.9 mm Hg. The process is studied by means of paper chromatographic, x-ray, and ir anal. Preliminary thermogravimetric expts. show that within the limits of the pressures studied an inhibiting action of water vapor predominates. The kinetic parameter, as also in the case of dehydration in vacuum, has 2 aspects: the beginning section of relatively rapid dehydration and the final section of slow loss of wt. Increase in vapor pressure leads to a broadening of the first section at the expense of a redn. of the final section. An increase in the pressure of the water vapor in the limits studied leads to a decrease in the rate of dehydration of $\text{NiNa}_2\text{P}_2\text{O}_7 \cdot 12\text{H}_2\text{O}$.

C. J. Steinberg

CB

REEL/FRAME
19880555

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PROFUSE RENAL FORNICAL HEMORRHAGES -U-
AUTHOR--PYTEL, A.YA. P
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 4, PP 132-139
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--KIDNEY, HEMORRHAGE, SURGERY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1233 STEP NO--UR/0531/70/000/004/0132/0139
CIRC ACCESSION NO--AP0054128
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STASIS IN THE VENOUS SINUSES OF FORNICES WITH DISTURBED INTEGRITY OF THEIR WALLS LIES AT THE BASIS OF PROFUSE RENAL HEMORRHAGES, WHICH UNTIL RECENTLY WERE ASSOCIATED WITH ESSENTIAL HEMATURIA. FORNICAL HEMORRHAGES MAY BE DUE TO DIFFERENT CAUSES, AMONG WHICH PARAMOUNT ATTENTION SHOULD BE PAID TO HEMODYNAMIC DISORDERS, URODYSKINESIS AND INTERMITTENT PYELOFORNICAL REFLUX. A CONNECTING CANAL BETWEEN FORNICAL VENOUS SINUSES AND THE LUMEN OF THE CALYX IS THE MORPHOLOGICAL MANIFESTATION OF FORNICAL HEMORRHAGES. THE DIAGNOSIS OF SUCH A CANAL ON THE BASIS OF PYELOGRAPHIC DATA AND RADICAL TREATMENT, RESECTION OF THE KIDNEY, WAS EFFECTED FOR THE FIRST TIME BY THE AUTHOR IN 1955 AND FOUND GENERAL RECOGNITION. INASMUCH AS THE SOURCE OF PROFUSE FORNICAL HEMORRHAGES MAY BE ESTABLISHED WITH THE AID OF ROENTGENOLOGICAL METHODS OF INVESTIGATION, THE THERAPEUTIC TACTICS SHOULD BE AN ORGAN PRESERVING OPERATION: IN SOME CASES RESECTION OF THE KIDNEY, IN OTHER, NEPHROPEXY. THE INDICATIONS TO NEPHROPEXY SHOULD BE VERY STRICT. THE ARTICLE CONTAINS THE RESULTS OF OPERATIVE TREATMENT OF 16 PATIENTS WITH PROFUSE FORNICAL HEMORRHAGES. IN 12 PERSONS THERE WAS A CHARACTERISTIC VENOUS CALYCEAL CANAL. RESECTION OF THE KIDNEY WAS PERFORMED IN 14 PATIENTS, NEPHRECTOMY, IN 3 AND NEPHROPEXY, IN 2. ALL THE PATIENTS RECOVERED. EACH CASE OF ESSENTIAL HEMATURIA SHOULD DRAW THE PHYSICIANS SPECIAL ATTENTION TO THE STATE OF FORNICAL ZONES OF RENAL CALYCES, WHEREFROM PROFUSE HEMORRHAGES COMMONLY OCCUR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--INDICATIONS FOR NEPHRECTOMY AND THE FATE OF SUBJECTS LEFT WITH A

SOLITARY KIDNEY -U-

AUTHOR--(02)--PYTEL, A.YA., GOLIGORSKIY, S.D.

P

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA I NEFROLOGIYA, 1970, NR 2, PP 14-20

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/1522

STEP NO--UR/0606/70/000/002/0014/0020

CIRC ACCESSION NO--AP0101605

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERSONAL EXPERIENCE AND A CRITICAL EVALUATION OF LITERATURE SOURCES WARRANT THE AUTHORS TO INFER THAT THE PRESENCE IN THE ORGANISM BUT OF A SOLITARY KIDNEY AFTER NEPHRECTOMY OF THE CONTRALATERAL ONE DOES ALLOW SUCH SUBJECTS TO BE CONSIDERED BUT AS RELATIVELY HEALTHY. NOTWITHSTANDING A COMPLETE PROVISION FOR HOMEOSTASIS, NORMAL CONTENT IN THE BLOOD OF RESIDUAL NITROGEN, PROPER WATER ELECTROLYTE AND ACID BASE BALANCE IT IS NOT TO BE BELIEVED THAT THE ORGANISM HAS BEEN SPARED THE DAMAGE INFLICTED BY NEPHRECTOMY. THE RESERVE POTENTIALITIES ARE NOT GREAT AND THERE IS A MENACE OF THE REMAINING KIDNEY LOOSING ITS ACTION POTENTIAL, ESPECIALLY UNDER AN ELEVATED FUNCTIONAL LOAD. HENCE, THE NEED FOR DISPENSARY OBSERVATION OVER PERSONS WITH SUSTAINED NEPHRECTOMY, AND THIS IN SPITE OF THE ABSENCE IN THE REMAINING KIDNEY OF ANY MORBID PROCESSES. THE DISPENSARY OBSERVATION IS CALLED FOR TO ALSO FACILITATE THE EARLIEST POSSIBLE DETECTION OF PATHOLOGICAL CHANGES IN THE REMAINING KIDNEY. THE LATTER DEVELOP MOST OFTEN IN SUBJECTS IN WHOM NEPHRECTOMY WAS PERFORMED IN CONNECTION WITH NEPHROLITHIASIS. PARTICULAR VIGILANCE IS REQUISITE AS TO A POSSIBLE DEVELOPMENT OF PYELONEPHRITIS, REGARDLESS OF THE KIND OF MALADY THAT LED UP TO NEPHRECTOMY. AT PRESENT, THE TREATMENT OF PATIENTS WITH A SOLITARY KIDNEY IS MUCH MORE EFFECTIVE THAN IT USED TO BE BEFORE THIS BEING DUE TO APPLICATION OF METHODS CORRECTING THE DISTURBED HOMEOSTASIS. INDICATIONS FOR OPERATIVE TREATMENT IN PERSONS WITH CORRESPONDING DISEASES IS MORE CATEGORICAL THAN THIS IS THE CASE FOR SUBJECTS WITH BOTH KIDNEYS.

UNCLASSIFIED

Acc. Nr: **AP0047236**

Ref. Code:

UR 0606

PRIMARY SOURCE: **Urologiya i Nefrologiya, 1970, Nr 1, pp 11-20**

SOME MODERN ASPECTS OF CHRONIC PYELONEPHRITIS

A. Ya. Pytel

Summary

Despite considerable attention paid by research workers and clinicians of many countries to problems of chronic pyelonephritis, much is still unsolved, and some concepts recently considered to be firmly grounded, proved to be unfounded. Chronic pyelonephritis is the most common disease of the kidneys, chiefly of childhood, often running a latent course. One of the symptoms of latent pyelonephritis — bacteriuria occurs in 8.9% of preschool children. Development and progress of chronic pyelonephritis cannot be attributed to bacterial infection alone. The author is in favour of the concept that primary chronic pyelonephritis is a secondary disease, preceded by interstitial nephritis; the latter is at first latent and creates a favourable background for development of bacterial inflammation in the interstitial tissue. Various chemical, physical and combined factors, as well as disturbances of urodynamics of the pelvis and ureter, being of great importance in genesis of pyelonephritis, were thoroughly investigated. The author is against the terms "urinary infection" and "infection of the urinary tract", since they fail to indicate the

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place of localization of the inflammatory process in the organs of the urinary and genital systems. Of great value in the diagnosis of pyelonephritis is the presence in the urine of the so-called active leukocytes (detailed description was presented in the paper by the same author in Urol. Internat., 1968, v. 23, No. 5). Among the therapeutic methods applied in chronic pyelonephritis of preference is continuous prolonged treatment with chemopreparations (for a period not less than 8 months on condition that the passage of urine is not disturbed). Treatment should be limited to prescription of nitrofurans, sulfanilamides, nalidixic acid, 5-NOK, and other preparations in combination with cranberry extracts. Antibiotics with a wide range of action can be prescribed only in the presence of special indications in exacerbations of the disease and acute attacks of pyelonephritis.

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Acc. Nr: **AP0047238**

PRIMARY SOURCE: Urologiya i Nefrologiya, 1970, Nr **UR 0606**
PP **31-37**

Ref. Code:

INDICATIONS AND SEQUENCE OF ROENTGENOVASOGRAPHIC EXAMINATION OF
THE KIDNEYS

Yu. A. Puteh A. V. Izanov

Summary

The paper is based on experience of application of abdominal aortography, selective renal arteriography, inferior cavography, and selective renal venography in 190 patients with various urological diseases. The authors suggest a definite order of vasographic investigations in patients with neoplasms of the kidneys, chronic pyelonephritis and hydronephrosis. They consider that any vasographic examination of the kidneys should start from abdominal aortography. Application of renovasographic methods in rationally elaborated order considerably increases the diagnostic possibilities of each method and reduces the percentage of errors.

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REEL/FRAME
19790745

DI 2

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--A METHOD OF EXAMINATION OF THE DIRECT ACTION OF ALLERGENS ON THE
FUNCTION OF THE ADRENAL CORTEX UNDER EXPERIMENTAL CONDITIONS -U-
AUTHOR--(03)--ADO, A.D., PYTSKIY, V.I., TOMILETS, V.A.
COUNTRY OF INFO--USSR
SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
VOL. 14, NR 3, PP 55-59
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PITUITARY GLAND, SURGERY, ADRENAL GLAND, CORTICOSTEROID, ACTH,
MEDICAL EXPERIMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1959 STEP NO--UR/0396/70/014/003/0055/0059
CIRC ACCESSION NO--AP0127360
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0127360

ABSTRACT/EXTRACT—(U) GP-0-

ABSTRACT. SECRETION OF CORTIZOL AND CORTICOSTERONE BY ISOLATED ADRENAL GLANDS OF INTACT AND HYPOPHYSECTOMIZED DOGS WAS EXAMINED IN PERFUSION OF THE ADRENAL GLANDS IN SITU WITH A BLOOD SUBSTITUTING SOLUTION. WITHIN 9 TO 15 MINUTES FROM THE ONSET OF PERFUSION SECRETION OF CORTICOSTEROIDS (CS) IN INTACT DOGS WAS MAXIMALLY STIMULATED BY THE OPERATIVE STRESS, AND EXCEEDED THE CS SECRETION IN HYPOPHYSECTOMIZED DOGS 4 TO 5 TIMES. THE ACTION OF NATIVE ACTH STOPS 18 TO 36 MINUTES FROM THE BEGINNING OF PERFUSION, AND THE SECRETION OF CS IN INTACT ANIMALS FALLS, REACHING THE LEVEL OF CS SECRETION IN NYPOPHYSECTOMIZED DOGS. ADRENAL GLANDS OF THE ANIMALS OF BOTH GROUPS GIVE THE SAME REACTION IN RESPONSE TO THE ADMINISTRATION OF 0.4 UNITS-ML OF EXOGENOUS ACTH, AND PERMIT TO TEST THE DIRECT ACTION OF THE ALLERGENS AND OF THE OTHER PREPARATIONS ON THE FUNCTION OF THE ADRENAL CORTEX IN PERFUSION WITH A BLOOD SUBSTITUTING SOLUTION IN DOGS, WITHOUT PRELIMINARY HYPOPHYSECTOMY. FACILITY: KAFEDRA PATOLOGICHESKOY FIZIOLOGII II MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. N. I. PIROGOVA.

UNCLASSIFIED

USSR

ZOLOTAREV, A. Ye., PYT'YEV, Yu. P.

"Invariant Grids and Decision Rules for Invariant Recognition Problems"

Tr. Mosk. In-ta Elektron. Mashinostr. [Works of Moscow Institute of Electronic Machine Building], 1972, No 25, pp 3-19 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V707, by the authors).

Translation: Simple selective properties of invariant grids are studied and simple theorems are proven, characterizing the resolving capacity of the grids. In the case of groups of translations and Euclidean motions, the results produced are illustrated with analytic and numerical studies. In conclusion, results are presented which characterize the properties of heterogeneous invariant grids.

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1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MATHEMATICAL MODELING OF ELECTRON TRANSPORT DURING PHOTOSYNTHESIS
ACCOMPANIED BY CHEMILUMINESCENCE -U-
AUTHOR--(02)-PYTYEVA, N.F., RUBIN, A.B.
COUNTRY OF INFO--USSR P
SOURCE--MOSCOW, BIOFIZIKA, NO 1, 1970, PP 47-52
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLANT PHYSIOLOGY, LUMINESCENCE, ELECTRON ACCEPTOR,
PHOTOSYNTHESIS, MATHEMATIC MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0839 STEP NO--UR/0217/70/000/001/0047/0052
CIRC ACCESSION NO--AP0121471
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121471

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REGIONS OF POSSIBLE VALUES OF RATE CONSTANTS AND INITIAL CONCENTRATIONS ARE DETERMINED FROM EXPERIMENTAL CURVES REFLECTING THE EXTINCTION OF THE PERSISTENT AFTERGLOW OF GREEN LEAVES. IT IS AT THESE VALUES THAT THE TIME DEPENDENCE OF THE SOLUTION RESPONSIBLE FOR THE LUMINESCENCE AGREES WITH THE EXPERIMENTAL DATA. THE RELATIONSHIP BETWEEN THE NATURE OF THIS SOLUTION AND THE INITIAL CONCENTRATIONS IS INVESTIGATED. THE EXISTENCE OF ELECTRON POOLS IN THE PHOTOSYNTHESIS CHAIN IS SHOWN TO BE ESSENTIAL AS A MEANS OF INCREASING THE STABILITY AND RELIABILITY OF THE ELECTRON TRANSPORT SYSTEM. FACILITY: MOSCOW STATE UNIVERSITY IMENI M. V. LOMONOSOV.

UNCLASSIFIED

USSR

~~PVT'YEVA, N. F. and RUBIN, A. B., Soil-Biology Faculty, Moscow State University~~
~~imeni M. V. Lomonosov~~

"Mathematical Modeling of Electron Transport During Photosynthesis Accompanied
by Chemiluminescence"

Moscow, Biofizika, No 1, 1970, pp 47-52

Abstract: The regions of possible values of rate constants and initial concentrations are determined from experimental curves reflecting the extinction of the persistent afterglow of green leaves. It is at these values that the time dependence of the solution responsible for the luminescence agrees with the experimental data. The relationship between the nature of this solution and the initial concentrations is investigated. The existence of electron pools in the photosynthesis chain is shown to be essential as a means of increasing the stability and reliability of the electron transport system.

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USSR

UDC: 097.6

P'YUK, V. Ye., MIKHAYLENKO, V. S., Kiev

"On the Problem of Improving the 'Noise Resistance' of Facsimile Images When Pulse Interferences are Acting in Communications Channels"

Kiev, Otbor i Peredacha Informatsii, Resp. Mezhved. Sb., No 28, 1971, pp 43-50

Abstract: The authors investigate the possibility of improving interference suppression in facsimile copies by predistortion of the FM signal on transmission and restoration on reception when pulse interference is acting in the phototelegraph channel. The effectiveness of predistortion is determined by the statistics of the facsimile copy. The interference suppression is determined by the FM signal-to-noise ratio at the receiver input when the average signal power is constant at the input of the communications channel. The proposed predistortion method is fairly simple and can be utilized in future equipment as well as existing facsimile apparatus. Seven illustrations, bibliography of three titles.
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P'YUK, V. Ye. and MIKHAYLENKO, V. S.

"Estimating the Effectiveness of Preemphasis for Improving the Noise Immunity of FM Graphic Information Transmission"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol. 13, No. 9, 1970, pp 1107-1112

Abstract: The system envisaged in this article is one of facsimile transmission to an electronic computer, a process which demands high receiver noise immunity to maintain the clarity of the transmitted line drawings. Since preemphasis has been considered in connection with improving the noise immunity of AM signals, this article is devoted to the possible role of preemphasis in noise-immunizing FM signals, particularly in connection with facsimile transmission. Expressions are obtained for the signal voltage at the receiver input with preemphasis, and the effectiveness of the preemphasis system is estimated from the signal/noise ratio at the receiver input for a constant average signal power at the input to the communication channel of the receiver. The voltage of the response to pulse noise at the output of the deemphasis circuit is determined under the assumption that the noise can be described by the Dirac function. The authors conclude that the use of preemphasis does improve the noise immunity of facsimile images and that the method they describe can be used in projected as well as existing facsimile equipment.

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PY2N O.A.

UR 0482

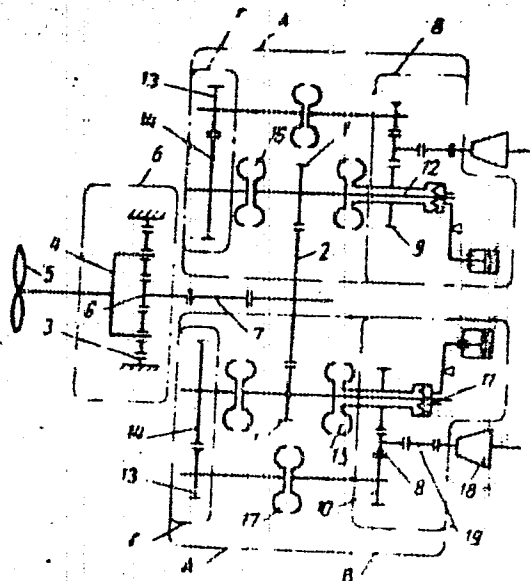
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-71

243430 SHIP'S TRANSMISSION comprising hydromechanical reversible reduction gear, with planetary stage, central gear train, reverse gear train, distributor and hydraulic clutch, differing in that the planetary stage has a crown, the pole of which is the driven link of the reduction gear. The sunwheel is connected to the central gear train, one gear of which is in contact with the forward and reverse wheels of the separator shaft respectively via the forward and reverse hydraulic clutch. A gear of the reverse gear train is connected to the reverse wheel of the distributor gear train, the central gear of which, being engaged simultaneously with the forward and reverse wheels of this train, serves as the driving link of the reduction gear. This enables fuller use to be made of the engine's power in reverse. In order to improve the coeff. of useful work of the installation during prolonged forward motion, the forward wheel of the distributor gear train is connected to a gear of the central gear train via a separating cam clutch.

19820991

AA0052390

Ioffe, L. Ya.;
Komarova, L. K.;
Pyzh, O. A.;
Rodin, A. S.



14.8.67 as 1181577/27-11. IOFFE L.YA. et al. (11.9.69)
 Bul 16/5.5.69. Class 65f. Int. Cl. B 63j.

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19820992

USSR

UDC 582.4:582.285.633.1

PYZHIKOVA, G. V., All Union Institute of Plant Pathology, B. Vyazemy

"Effect of Temperature on the Infection of Wheat with Yellow Rust and Subsequent Development of the Causative Agent"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 227-235

Abstract: Experiments with various spring wheat varieties (Artemovka, Cordeiform 5695, Melyanopus 26, and Marodnaya) and 3 yellow rust races (7M, 20 and 25) showed that the rate of infection is dependent on the temperatures prevailing during the wet period. As the temperature rose from 2 to 15°C, the period of moisture needed to induce infection shortened. Based on these findings, the author worked out a formula for use in computing the duration of the wet period likely to promote infection at a particular temperature. Other formulas can be used to predict the end of uredospore generation and thereby provide an objective basis for the most appropriate time to start spraying.

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1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF ASPIRATED AIR ON THE SINTERING PROCESS -U-
AUTHOR--(03)-BYKOV, M.S., STEPANOV, A.I., PYZHOV, Y.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 39-42
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--IRON ORE, SINTERING FURNACE, SINTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1395 STEP NO--UR/0148/70/013/002/0039/0042
CIRC ACCESSION NO--AT0120188
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120188

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SINTERING TESTS ON FE ORES WERE TREATED STATISTICALLY. THE EXPTS. WERE PERFORMED IN A PREVIOUSLY DESCRIBED APP. DURING RAKEFACTION WHICH CHANGED DURING THE SINTERING PROCESS. THE END OF SINTERING WAS TAKEN AS THE INSTANT OF THE 1ST LOWERING OF THE TEMP. OF THE EXHAUST GASES AFTER ITS MAX. VALUE. FROM THE CHANGE IN THE SP. AMT. OF ASPIRATED AIR, THE SINTERING PROCESS CAN BE SUBDIVIDED INTO 2 PERIODS: DURING THE 1ST PERIOD (FROM THE START OF SINTERING TO THE INSTANT OF A SHARP INCREASE IN THE TEMP. OF THE EXHAUST GASES) IT CHANGES INSIGNIFICANTLY, AND IN THE 2ND PERIOD IT INCREASES SHARPLY. ANY GIVEN MEASURES DIRECTED TOWARD INCREASING THE SP. CONSUMPTION OF AIR IN THE EARLY STAGES OF SINTERING OUGHT TO MAKE FOR AN INCREASE IN THE PRODUCTIVITY OF THE SINTERING APP. FOR MORE CORRECT JUDGMENT RELATIVE TO THE COURSE AND THE TERMINATION OF THE SINTERING PROCESS, OF SIGNIFICANCE IS NOT ONLY THE TEMP. AND THE COMPN. OF THE EXHAUST GASES, BUT ALSO THE NATURE OF THE CHANGE IN THE SP. AMT. OF ASPIRATED AIR IN TIME.

FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

USSR

UDC 539.67

SEMENIKHIN, A. N., and PYZHOVA, T. A., Moscow Engineering Physics Institute

"Recovery of Internal Friction in Titanium"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1113-1114

Abstract: A study was made of the recovery of internal friction in polycrystalline titanium by the method of attenuating oscillations at about 1 KHz in the amplitude-independent area. The activation energies determined were 0.42 ± 0.05 eV for the first stage and 0.75 ± 0.05 eV for the second stage. Difficulties were encountered in interpreting the results. However, it is concluded that the first stage of recovery at $40-70^\circ$ with an activation energy of 0.42 eV results from fixation of free dislocations by point defects formed during plastic deformation. The second stage in the $120-220^\circ$ temperature interval with an activation energy of 0.75 eV probably results from fixation of free dislocations by impurity interstitial atoms.

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UDC 612.744.612.76

USSR

PYZHOVA, V. A., Sector of Biochemistry, Leningrad Scientific Research
Institute of Physical Culture, Leningrad

"Biochemical Changes in the Organism in Muscular Work of Limited Duration
in Relation to the Way of Adaptation"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 59,
No 7, Jul 73, pp 1,087-1,090

Abstract: It was established in experiments in which rats had been trained by making them swim for various periods per day in water at 30-32° for 42-56 days that various limiting durations of a single effort (swimming until the animal could not longer float) after training caused by different degrees of adaptation of the organism were accompanied by equal intensities of depletion of muscle glycogen. The intensity of liver glycogen depletion increased with increasing degrees of adaptation and then decreased somewhat at the highest adaptation levels. The ATP-ase activity in muscles decreased by the same percentage in adapted and control animals, notwithstanding the great difference in the limiting effort. Stepwise increases in the load to which the animals were subjected in individual swimming periods during training were more effective in increasing adaptation to muscular work than gradual, linear increases.

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Nuclear Science and Tech

USSR

KARALOVA, Z. K., PALEY, P. N., IVANOV, R. N., GABESKIRIYA, V. YA., and
PYZHOVA, Z. I.

"Investigation of Protactinium and Uranium Accumulation by Thermal Neutron Irradiation of Th^{230} and Th^{232} "

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 199-201

Abstract: An investigation was made to determine the accumulation of protactinium and uranium isotopes, and the burn-up of thorium isotopes during the irradiation of specimens with an isotope ratio $\text{Th}^{230}/\text{Th}^{232} = 1.462$ by a 1×10^{15} neutron/cm² . sec flux of thermal neutrons. The experimental procedure and technique are described in detail. It is shown that 3.5% of the original Th^{230} was transformed into Pa^{231} by the irradiation of the thorium specimen with a 1.462 isotope ratio for 10 periods of 24 hours each by a 1×10^{15} neutron/cm² . sec flux of thermal neutrons. The isotope ratio $\text{Th}^{232}/\text{Th}^{230}$ increased from 1.464 to 1.557 , which is connected to the more rapid burn-up of Th^{230} than of Th^{232} . The effective radiation capture cross sections of Th^{230} , Pa^{231} , and U^{232} , calculated from the experimental data are 78.5, 12, 280, and 170 barns, respectively. The obtained results were used to calculate the Pa^{231} accumulation for a given

USSR

KARALOVA, Z. K. et al, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 199-201

Th²³⁰ in suspension as a function of integral neutron flux. The maximum Pa²³¹ yield at a 1×10^{15} neutron/cm² . sec thermal neutron flux density after 100 effective periods of 24 hours was about 26%. Orig. art. has: 3 figures, 1 table, and 4 references.

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1/2 019
UNCLASSIFIED
TITLE--EXTRACTION OF ACTINIUM AS ITS COMPOUND WITH
1,PHENYL,3,METHYL,4,BENZOYL PYRAZOLONE,5 -U-
AUTHOR-(03)-KARALOVA, Z.K., PYZHOVA, Z.I., RODIONOVA, L.M.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM.; 25: 909-13 (MAY 1970)
DATE PUBLISHED----MAY70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLVENT EXTRACTION, ACTINIUM, BENZENE, PYRAZOLE, BENZENE
DERIVATIVE, ORGANOMETALLIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/1178
STEP NO--UR/0075/70/025/000/0909/0913
CIRC ACCESSION NO--AP0138193
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138193

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ACTINIUM CAN BE QUANTITATIVELY
EXTRACTED AS ITS COMPOUND WITH 1,PHENYL,3,METHYL,4,BENZOYLPIRAZOLONE,5
BY A MIXTURE OF BENZENE AND OCTYL ALCOHOL FROM SOLUTIONS WITH PH 2.6.
EXTRACTION OF ACTINIUM WAS STUDIED AS A FUNCTION OF PH, THE REAGENT
CONCENTRATION, THE NATURE OF THE SOLVENT, THE PHASE CONTACT TIME.
CONDITIONS WERE FOUND FOR SEPARATING ACTINIUM FROM RADIUM THORIUM, LEAD,
AND BISMUTH ISOTOPES. THE YIELD OF ACITINIUM IF 90PERCENT.
FACILITY: INST. OF GEOCHEMISTRY AND ANALYTICAL CHEMISTRY, MOSCOW.

UNCLASSIFIED

USSR

UDC 621.375.82

AKERMAN, D., YELISEYEV, P. G., KAYPER, A., MAN'KO, M. A., RAAB, Z.

"Methods for Selection of Types of Oscillations in Injection Semiconductor Lasers"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 85-90 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1115)

Translation: To improve the spectral composition of radiation of an injection semiconductor laser, particularly to raise the yield power in a mode of a single type of oscillations, external elements having spectral selectivity were introduced into the resonator of the semiconductor laser. The following versions were studied experimentally: (a) a compound resonator; (b) a resonator with an interference filter; (c) two optically connected Fabry-Perot-type resonators of different lengths. The effect of the external selective element on the radiation spectrum of the laser was observed in all cases, and generation in one longitudinal type of oscillations was achieved for an essentially greater excess of the threshold than in ordinary injection semiconductor lasers. The output power in a single-frequency mode was up to 0.5 W (in the case of a composite resonator). Possibilities of detuning the wavelength of the laser with the aid of external elements was studied within the range of the amplification band of the semiconductor. 15 ref. Authors abstract.

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USSR

UDC: 621.373:530.145.6

AKERMAN, D., YELISEYEV, P. G., KAYPER, A., MAN'KO, M. A., RAAB, Z.

"Methods of Mode Selection in Injection Semiconductor Masers"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 85-90 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D173)

Translation: In order to improve the spectral composition of emission from an injection semiconductor maser, especially to increase the output power in one wave mode, external elements having spectral selectivity were introduced into the maser cavity. The following modifications were experimentally studied: a) a composite cavity; b) a cavity with an interference filter; c) two optically coupled cavities of the Fabry-Perot type with different lengths. The effect of the external selective element in the maser emission spectrum is observed in all cases, and emission on a single longitudinal wave mode is achieved at an appreciably higher excess over the threshold than in conventional semiconductor injection masers. The output power in the single-frequency mode is as high as 0.5 W (in the case of a composite cavity). An investigation is made of the possibilities for tuning the maser wavelength by means of external elements within the range of the amplification band of the semiconductor. Five illustrations, bibliography of fifteen titles.

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